

Counterfactuality and Past

Kilu von Prince

Konstanz, 13 July 2018

The puzzle

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- b. *If Mariam studied enough (tomorrow), she would pass the test.*
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- English Simple Past (ESP) is used to refer to the counterfactual present and future.
 - This connection between counterfactuality and past has been attested in a large number of unrelated languages.
 - What is particularly puzzling for ESP is that the reference to non-actual worlds at the same time conditions a reference to the present or future.

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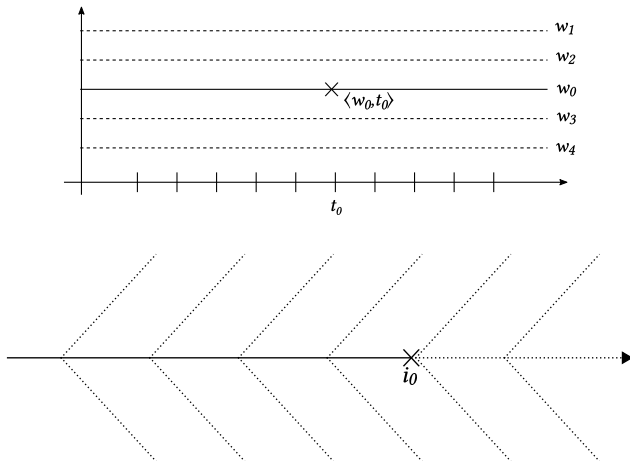
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- The main challenge for the second type is semantic compositionality.

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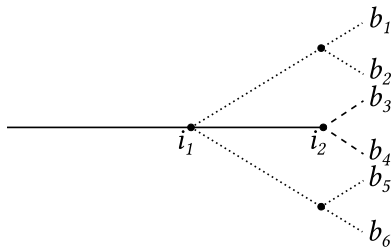
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 - remoteness-based approaches (Iatridou, 2000)
 - and backshifting approaches (Ippolito, 2013)
- The main challenge for the first type of approach is in generating the correct meanings.
- The main challenge for the second type is semantic compositionality.
- I will introduce a novel approach to branching time that supports a three-way distinction instead of a two-way distinction in order to solve both sets of problems.

The puzzle

Parallel worlds vs. branching time



Separating counterfactuality from possible futures



Facts in focus

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- 2011 In Göttingen: First presentation of my work on the Daakaka TAM system.
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- 2017 First submission of the current proposal on counterfactuality and past in English and beyond.

Past and counterfactuality: removed from the actual present

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- The past is removed from the present moment.

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- The past is removed from the present moment.
- Counterfactual developments are removed from the actual world.
- The literal, temporal meaning of the past marker can be metaphorically extended to a modal meaning.

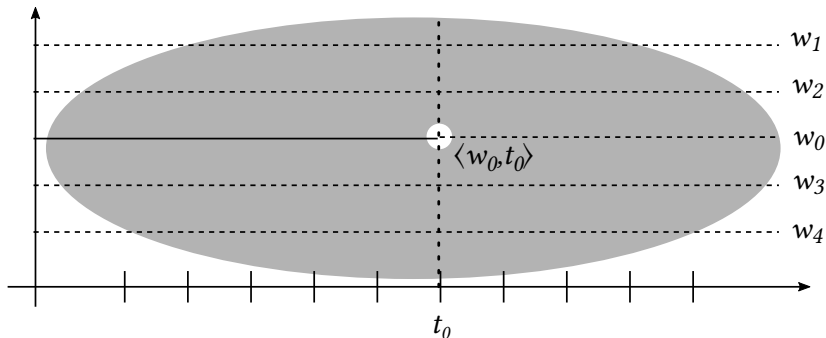
Iatridou (2000)

Exclusion Feature (Excl F)

$T(x)$ excludes $C(x)$.

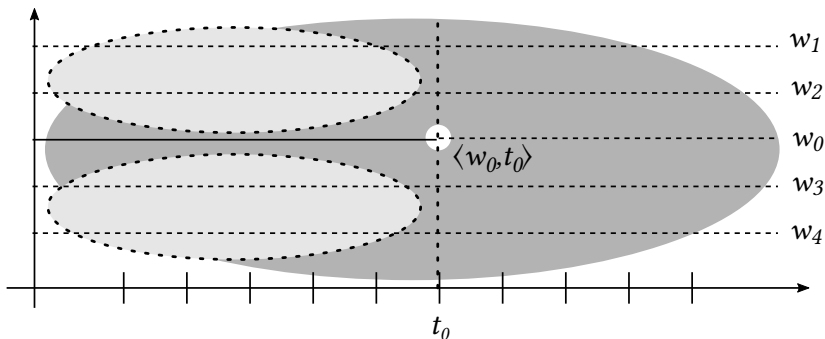
- x can range over worlds or times;
- $T(x)$: “the x that we are talking about”
- $C(x)$: “the x that for all we know is the x of the speaker”.

Modal/temporal remoteness

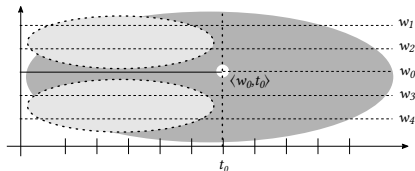


Iatridou (2000): excluding the counterfactual past

- (4) If I *slept/ had slept past 6am yesterday, I would have missed my flight.

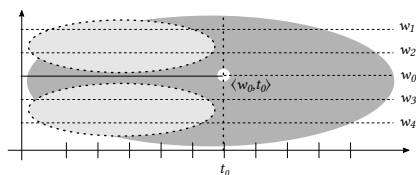


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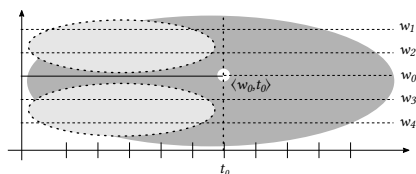
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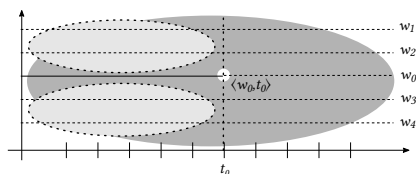
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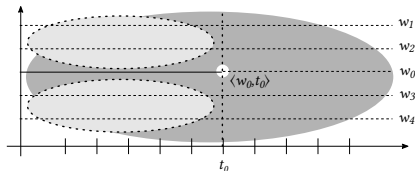
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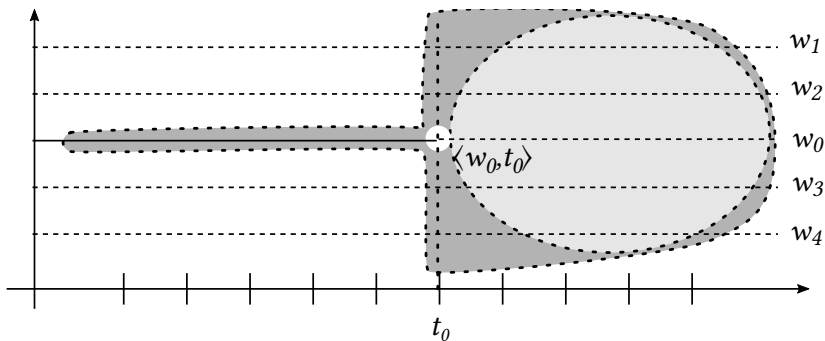
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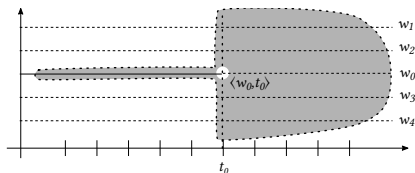
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⇒ ESP cannot refer to the counterfactual past.
- A2 English Past Perfect (EPP) adds another layer of past. Two exclusion features allow for a difference in both time and world.
⇒ EPP can refer to the counterfactual past.
- My objection: Past-and-counterfactuality markers in other languages can refer to the counterfactual past (Daakaka).

Iatridou (2000): including the (counterfactual) future

(5) If I slept past 6am tomorrow, I would miss my flight.



Iatridou (2000): including the (counterfactual) future



A3 The future is only modally, not temporally removed from the actual present.

⇒ ESP can refer to the future.

- My objection: Do we really want to assume that the future is not temporally removed from the present?

Iatridou (2000): exclusion of the possible future

(6) If I slept past 6am tomorrow, I would/*will miss my flight.

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- But which mechanism ensures that there is a [present feature] in the apodosis if and only if ESP ranges over worlds instead of times?

(7) If Lin **ran** a marathon yesterday, she **will** be still exhausted today.

Iatridou (2000): EPP including the counterfactual future

- (8) If your flowers had died NEXT WEEK, I would have been devastated.¹

▶ Excluding Ctf Past

A4 The future is modally, not temporally removed from the present.

¹In a scenario where I promised my friend to take care of her flowers next week, but she informs me that it won't be necessary because her flowers just died this week, compare Ogiwara (2000).

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⇒ EPP should not be allowed to refer to the counterfactual future, yet it does.

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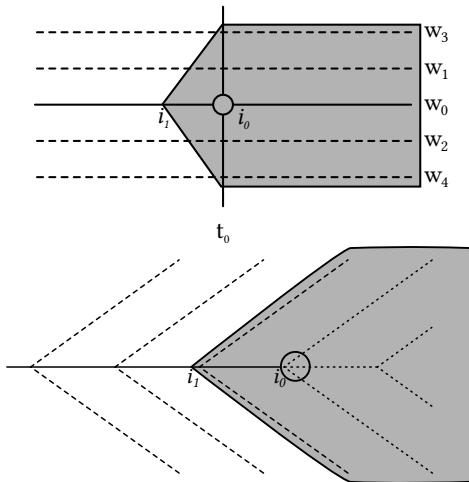
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- Allowing a reference to the future comes at the price of assuming that the future is not temporally removed from the present.
- The same assumption wrongly predicts that EPP should not refer to the counterfactual.
- It is not clear how to derive the incompatibility with ESP with future reference with *will*.

Back-shifting approaches

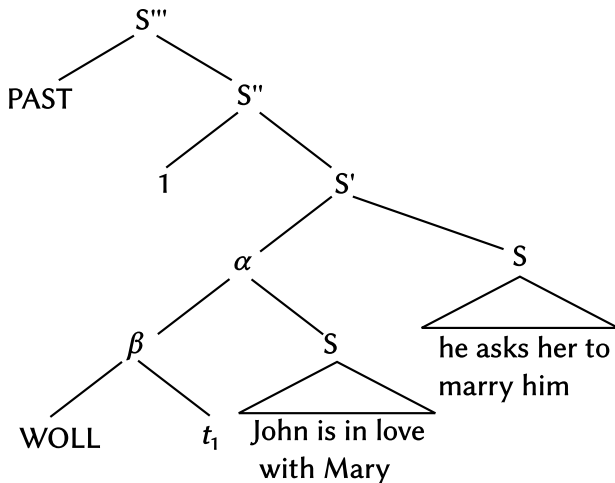
Back-shifting approaches: the idea



Back-shifting approaches: Ippolito (2013)

- (9) A: *My flowers died last week.*
B: Oh. If your flowers #died/ had died NEXT WEEK, I would have been devastated.
- Counterfactual conditionals with ESP have to be consistent with the presuppositions of their prejacent.
 - EPP counterfactual conditionals only have to be consistent with the presuppositions at an earlier stage of the common ground.

Ippolito (2013): Derivation



If John were in love with Mary, he would ask her to marry him.

Ippolito (2013): excluding the counterfactual past

- (10) If I *slept/ had slept past 6am yesterday, I would have missed my flight.

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- The past form in the protasis shifts back the time of historical accessibility.
 - It cannot also shift back the event time.
- ⇒ Reference to the counterfactual past is unavailable to ESP.

Ippolito (2013): excluding the possible future

(11) If I slept past 6am tomorrow, I would/*will miss my flight.

- *would/will* are two different spell-outs of WOLL.
- When WOLL is in the scope of past tense, it is spelled out as *would* (going back to Abusch 1997).

Ippolito (2013): Summary

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- This approach also excludes unattested readings.
- It only does so at the price of highly involved assumptions about the syntax-semantics interface.

Interim conclusions

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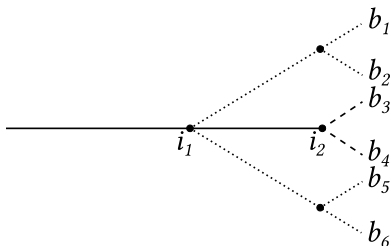
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- However, the remoteness-based approaches tend to make inadequate predictions.
- The back-shifting approaches are troubled by mismatches between form and meaning.
- Neither line of reasoning has yet attempted to fully disentangle counterfactual indices from possible futures.

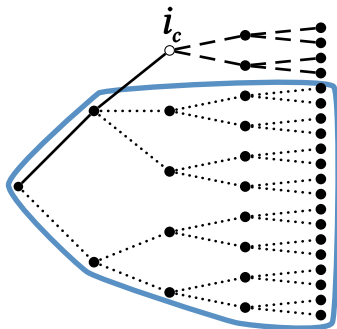
Branching Time



Three modal domains (instead of two)

- 1 The actual past/present: $\{i | i \leq i_0\}$
- 2 The possible future: $\{i | i_0 < i\}$
- 3 The counterfactual: $\{i | i \not\leq i_0, i_0 \not\leq i\}$

Counterfactuality



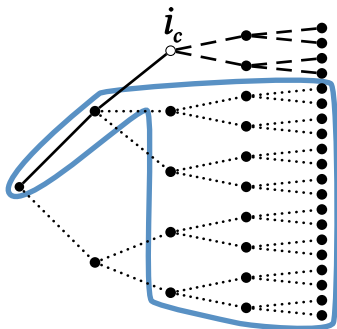
Definitions: ESP

English Simple Past

$$\llbracket \mathbf{ESP} \rrbracket^{c,g} =$$

$$\lambda p \lambda i : i \in R_I, i \in \{ \{ i' \mid i' < i_c \} \cup \{ i'' \mid t(i_c) \leq t(i''), i_c \not\leq i'' \} \} \cdot p(i)$$

This will be abbreviated as : $\lambda p \lambda i : i \in I_{\mathbf{ESP}} \cdot p(i)$

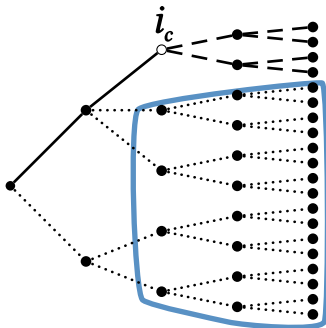


Definitions: *would*English *would*

$$\llbracket \mathbf{would} \rrbracket^{c,g} =$$

$$\lambda p. \forall b \in R_B. \exists i : i \in b, i \in R_I, i \in \{i' \mid t(i_c) \leq t(i'), i_c \not\leq i'\} \cdot p(i)$$

Abbreviated as: $\lambda p \forall b \in R_B. \exists i : i \in b, i \in I_{\text{WOULD}} \cdot p(i)$



Definitions: *if*

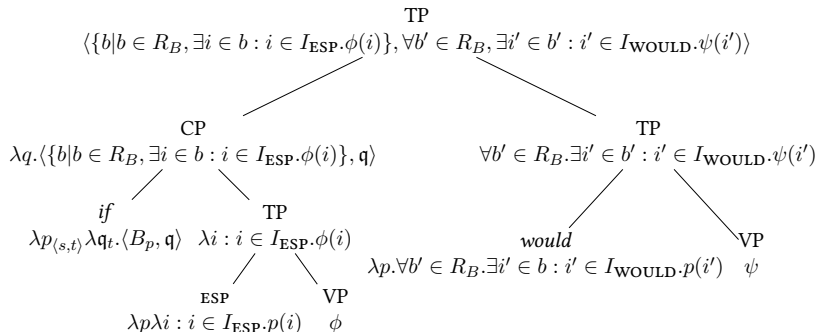
If (version 1)

$$\llbracket \mathbf{if} \rrbracket = \lambda p_{\langle s,t \rangle} \lambda q_{\langle s,t \rangle} . B_p \subseteq B_q, \text{ where } B_\phi = \{b \mid b \in R_B, \exists i \in b. \phi(i)\}$$

If (version 2)

$$\llbracket \mathbf{if} \rrbracket = \lambda p_{\langle s,t \rangle} \lambda q_t . \langle B_p, q \rangle, \text{ where } B_\phi = \{b \mid b \in R_B, \exists i \in b. \phi(i)\}$$

Deriving a counterfactual clause



Interim conclusions

- I make minimal assumptions about the meaning of English morphemes.
- The entire conditional can be derived by functional application.

Do conditionals even have truth conditions?

*...when we consider the uncertain judgements we express as subjunctive conditionals, the case is just as strong as it is for indicatives, that these conditionals do not express propositions—that they do not have truth conditions.
(Edgington, 2008, 3)*

Truth conditions of counterfactuals: existent but vague?

Consider the counterfactual conditional “If I were to look in my pocket for a penny, I would find one”. Is it true? That depends on the factual background against which it is evaluated. Perhaps I have a penny in my pocket. [...] So in this case the counterfactual is true. (Lewis, 1981)

²Attributed to Quine by Lewis (1973).

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- (12) If Caesar had been in command [in Korea] he would have used the atom bomb.
- (13) If Caesar had been in command he would have used catapults.²

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Truth conditions: existent but not testable

- (14) A: If Laura had taken the train, she would have arrived at 2 pm.
B: That's not true. Laura did take the train, but she arrived only at 3 pm.

Truth conditions: existent but not testable

- (14) A: If Laura had taken the train, she would have arrived at 2 pm.
B: That's not true. Laura did take the train, but she arrived only at 3 pm.
- (15) A: If Laura had taken today's 8 o'clock train from Frankfurt, she would have arrived in Berlin at 2 pm.
B: That's not true. MARTHA took that exact train and she arrived only at 3 pm.

Truth conditions: Summary

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- the corresponding counterfactual conditional is either
 - false, or
 - irrelevant.
- At the same time, counterfactual conditionals are generally always **defeasible**.

Preliminary observations

(16) *A asks when Laura will arrive. B knows for a fact that Laura has taken the train.*

B: #If she took the train, she will be here by noon.

B: #If she had taken the train, she would be here by noon.

(17) Laura didn't take the train.

a. #If she took the train, she will be here by noon.

b. If she had taken the train, she would be here by noon.

The “counterfactual implicature”

- (18) If Laura had taken the train, she would be here by noon.
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The “counterfactual implicature”

(18) If Laura had taken the train, she would be here by noon.

↪ Laura did not take the train.

(19) If Jones had taken arsenic, he would have shown just exactly those symptoms which he does in fact show.

↪ Jones did not take arsenic.

(Going back to Anderson (1951, 37))

Deriving the contrary-to-fact implicature

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Assertion about actual indices

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 - Assertion about actual indices
 - > conditional about actual indices
 - > conditional about counterfactual indices

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 - The conditional *if he took arsenic, he shows the exact symptoms which he actually shows* is vacuously true.
- ⇒ The usual contrary-to-fact implicature is therefore canceled.

Predictions

- My position predicts that the contrary-to-fact implicature does not arise in contexts where the QUD is about counterfactual indices.
- I believe this is true, as illustrated in (21).

(21) A: What would YOU have done if the professor had caught you cheating?

B: If I had been caught cheating, I would have admitted my mistake and done penance. In fact, I was caught once and admitted my mistake and have never cheated again.

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- ...without overgenerating interpretations.
- The truth conditions I predict are well compatible with established observations.

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- I have presented a unified definition to English Simple Past.
- This definition allows us to seamlessly derive the meaning of counterfactual conditional clauses ...
- ...without overgenerating interpretations.
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- This definition allows us to seamlessly derive the meaning of counterfactual conditional clauses ...
- ...without overgenerating interpretations.
- The truth conditions I predict are well compatible with established observations.
- The felicity conditions can successfully derive the contrary-to-fact implicature ...
- and also predict when it does not arise.

Placek & Müller (2007): Historical conditionals

(22) *If this coin had shown heads, I would have won my bet.*

(23) *If this were a ruby, it would be red.*

- The goal of this approach is to find rigorous truth conditions for a subset of counterfactual conditionals – historical ones.
- My approach does not allow for this distinction ...
- except possibly if the set of branches is restricted to realistic ones.

Counterfactualty as a property of indices

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- I suggest that, instead, counterfactuality is a property of indices.
- A counterfactual utterance, then, is not an utterance with a contrary-to-fact implicature.
- It is instead an utterance about counterfactual indices.

Iatridou (2000) and the case of the counterfactual future

Iatridou (2000, 231)

...it would appear that we cannot have a counterfactual to the future as the future is conceptualized as not yet fact.

Iatridou (2000, 235)

I will later argue that the FLV's implicature arises from the same source as the counterfactuality in PresCFs and PastCFs, calling into question the earlier assumption that there is no such thing as a "future CF".

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- Answering a request with “no” can be perceived as rude.
- By asking about counterfactual indices, the speaker allows their interlocutor to answer positively, even if they can't follow the request:

(26) I would gladly, (but the windows can't be opened here).

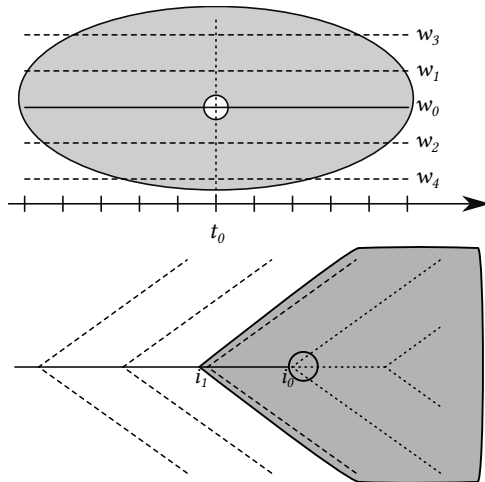
Indicative with contrary-to-fact implicatures

(27) If you're Santa Claus, I'm the Easter Bunny.

- This sentence is not about counterfactual indices, therefore, in my account, not counterfactual.
- The contrary-to-fact implicature here is derived via a different route.

Thank you!

Remoteness vs. Back-shifting



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